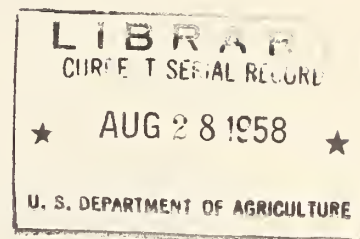


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Convenience Foods and their Cost to Consumers

A PILOT STUDY IN WASHINGTON, D.C.
DECEMBER 1957

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Washington, D.C.
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CONVENIENCE FOODS AND THEIR COST TO CONSUMERS 1/

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: Recent increases in the retail price of food have created :
: widespread public interest in the causes. One of these to which :
: attention has been directed is the increasing services connected :
: with the so-called convenience foods. This article reports on a :
: comparison of prices of convenience foods and of the corre- :
: sponding foods with less services. The majority of the conven- :
: ience foods were little more expensive and some were less :
: expensive. :
:

Background

Convenience or "serviced" foods have accounted for relatively little of the increase of 27 billion dollars since 1940 in the bill for marketing farm food products. 2/ More than half of this increase, or about 16 billion is attributed to the general rise since 1940 in costs of performing marketing operations. 3/ Nearly 5 billion dollars of the increase is due to the larger volume of farm products marketed for consumption by U. S. civilians. Growth in volume reflects the increase in population, higher farm production, movement of people off farms, and reduced output of food for family use, which does not enter the marketing system.

The remainder of the increase, or 6 billion dollars, includes the costs of all other factors, including additional services. Some of the important factors contributing to this increase are more away-from-home eating and other added marketing services such as better packaging. In view of these and other considerations, the growth of the processed and prepared foods industry does not appear to have been the major factor in the increase in the marketing bill. 4/

The question is sometimes raised as to how much more convenience foods--those with added marketing service, or those which are more highly processed--cost than the foods for which they are substituted. Further, it is asked whether any increase in the part of the consumer's food dollar going to pay for the added services results in less money being spent on food, or whether new products with added marketing services may be a key factor in maintaining or expanding the proportion of income spent on food and services.

1/ Prepared in the Market Development Branch, Market. Res. Div., U. S. Dept. Agr. by Roland G. Harris and Philip B. Dwoskin.

2/ It is recognized that probably all foods sold in the grocery store today have been changed in form to some extent by added marketing services, but as used here, unserviced foods means those that have been changed less than the serviced foods by processing or servicing.

3/ Marketing Costs for Food, U. S. Dept. Agr., Misc. Pub. 708 (revised), Washington, Mar. 1958, p. 10.

4/ Farm-Retail Spreads for Food Products, U. S. Dept. Agr., Misc. Pub. 741, Washington, 1957, pp. 50-51.

To gain a better understanding of the impact of convenience foods, the Market Development Branch of the Agricultural Marketing Service undertook a pilot study as a preliminary step in evaluating the economic effects of the trend toward more highly processed foods. This study, which is reported on here, was concerned primarily with relative prices paid by consumers for food with marketing services added and of equivalent quantities of food with few, if any, added marketing services.

The price study was conducted in Washington, D. C., during the week of December 9, 1957. Prices were obtained in supermarkets of the three largest chain organizations in the Washington, D. C., area. Food trade spokesmen indicated that the firms included in this study probably account for more than 50 percent of the total dollar volume of grocery store sales in the Capital City metropolitan area.

This preliminary investigation of convenience food prices does not provide the final answer to the question concerning the impact of convenience foods on the demand for farm commodities; further investigations are necessary. The food industry is dynamic, with an estimated 200 new products appearing in grocery stores each year. It is believed that price comparisons should be made in various regions of the United States over a longer time to average out regional variations and seasonal changes and to obtain prices for food items unavailable during certain seasons. The limitations in the findings are recognized, but it is believed that they may prove helpful to other researchers and the food industry.

Though equivalent quantities of serviced and unserved foods were used for price comparison, qualities of foods in the two groups were not necessarily equal. For some foods, no technology has been developed which yields a processed product equal in quality to the fresh product. However, there are other processed foods which in some uses, at least, are equal, if not superior, in quality to the fresh products that are displayed in many retail stores.

Comparative Prices of Serviced and Unserved Foods

One hundred and twenty-six products (63 serviced and 63 unserved) were selected for the study. The main condition attached to the selection was that the unserved products were also sold in a more highly serviced form. A large number of products were selected in the belief that large numbers would tend to average out differences in quality and price due to factors other than added service. For example, the same grade or variety of foods was not always available in both forms. Grades, varieties, and other food characteristics, however, were kept as comparable as possible. Prices were obtained for such convenience products as packaged frozen ground beef patties, cutup ready-to-fry chicken, frozen precooked sausage, breaded ready-to-fry shrimp, instant coffee, frozen french fried potatoes, frozen chopped spinach, frozen concentrated orange juice, chilled orange juice, and many other convenience food products along with prices for comparable products in the fresh or unserved state. In addition, prices were obtained from another study for such items as cake, cookie, biscuit, and piecrust mixes. 5/

5/ "Pilot Study of Money and Time Spent in Preparing Baked Products from Individual and Premixed Ingredients," Journal of Home Economics, by Asp, Elaine; Noble, Isabel; and Clark, Faith, Vol. 49, No. 9, Nov. 1957, pp. 717-19.

Table 14.- Average prices of unserviced foods and serviced foods, three large chain stores, Washington, D. C., December 9, 1957

Groceries

Unserviced product 1/	Unit	Price per unit	Serviced product	Unit	Price per unit	Conversion		Equivalent cost minus price of unserviced products
						factor:	per	
						2/ Dollars	3/ Dollars	
Coffee, roasted ground	1 lb. can	.99	Coffee, instant	1 lb. jar	3.84	.263	1.01	.02
Tee, leaves	1 lb. box	1.74	Tee, bags	1 lb. box	3.20	1.024	3.28	1.54
Tee, leaves	1 lb. box	1.74	Tee, instant	1 lb. jar	7.84	.175	1.37	-.37
Sugar, bulk	1 lb. box	.13	Sugar, tablets	1 lb. box	.17	---	.17	.04
Cake, yellow, all ingredients 4/	1 cake	.33	Cake mix, prepared	1 cake	.41	---	.41	.08
Cookies, all ingredients 4/	1 batch	.31	Cookie mix, prepared	1 batch	.44	---	.44	.13
Biscuits, all ingredients 4/	1 batch	.09	Biscuit mix, prepared	1 batch	.13	---	.13	.04
Pie crust, all ingredients 4/	1 pie	.05	Pie crust mix, prepared	1 pie	.09	---	.09	.04
Bread, all ingredients	1 lb. loaf	.16	Bread, prepared & sliced	1 lb. loaf	.20	---	.20	.04
Meats and fish								
Bacon, slab (with skin)	1 lb.	.57	Bacon, sliced	1 lb. pkg.	.67	.918	.62	.05
Sausage, bulk	1 lb.	.86	Sausage, precooked & frozen	1 lb. pkg.	1.10	.833	.92	.06
Beef, Chuck Roast, bone in	1 lb.	.63	Beef patties, ground and frozen	1 lb. pkg.	.84	.774	.65	.02
Beef, Round Steak, bone in	1 lb.	.99	Beef steaks, cubed & frozen	1 lb. pkg.	1.08	.863	.93	-.06
Chicken, frying, whole, dressed	1 lb.	.35	Chicken, frying, cut up	1 lb. pkg.	.35	---	.35	None
Ham, uncooked, bone & skin	1 lb.	.67	Ham, cooked, boneless and skinless	1 lb. can	.98	.73	.72	.05
Bologna, whole sausage	1 lb.	.57	Bologna, sliced	1 lb. pkg.	.63	---	.63	.06
Liverwurst, whole sausage	1 lb.	.69	Liverwurst, sliced	1 lb. pkg.	.75	---	.75	.06
Fish, fresh 5/	---	---	Flounder, filet & frozen	1 lb. pkg.	.60	.54	.32	---
Shrimp, headless, unshelled	1 lb.	.96	Shrimp, shelled, veined and frozen	1 lb. pkg.	.99	.80	.79	-.17
Shrimp, headless, unshelled	1 lb.	.96	Shrimp, breaded, ready to fry and frozen	1 lb. pkg.	1.04	.80	.83	-.13
Produce								
Strawberries, fresh 5/	---	---	Strawberries, frozen	1 lb. pkg.	.41	1.24	.51	---
Sweet potatoes, bulk	1 lb.	.13	Sweet potatoes, candied frozen	1 lb. pkg.	.33	.898	.30	.17
Sweet potatoes, bulk	1 lb.	.13	Sweet potatoes, plain	1 lb. can	.22	.898	.20	.07
Carrots, without tops	1 lb. pkg.	.16	Carrots, diced	1 lb. can	.20	.825	.17	.01
Beets, with tops	1 lb. bunch	.16	Beets, diced	1 lb. can	.19	.825	.16	None
Tomatoes	1 lb. tube	.33	Tomatoes, crushed	1 lb. can	.19	.529	.10	-.23
Lima beans, green, unshelled 5/	---	---	Lima beans, shelled and frozen	1 lb. pkg.	.38	.90	.34	---
Lima beans, green, unshelled 5/	---	---	Lima beans	1 lb. can	.25	.56	.14	---
Potatoes, Eastern bulk	1 lb.	.05	Potatoes, washed & bagged	1 lb. bag	.055	---	.055	.005
Potatoes, Eastern bulk	1 lb.	.05	Potatoes, french fries, frozen	1 lb. pkg.	.32	.54	.17	.12

Continued --

Produce

Unserviced product ^{1/}	Unit	Price per unit	Serviced product	Unit	Price per unit	Conversion factor	Price per unit	Equivalent cost	Equivalent cost minus price of unserviced products
						2/			
							Dollars	Dollars	
Spinach, bulk unwashed	1 lb.	.30	Spinach, chopped & frozen	1 lb. pkg.	.24	.55	.24	.13	-.17
Cauliflower, head	1 lb.	.16	Cauliflower, cut & frozen	1 lb. pkg.	.40	.30	.40	.12	-.04
Stringbeans, green bulk	1 lb.	.21	Stringbeans, sliced & frozen	1 lb. pkg.	.39	.79	.39	.31	.10
Stringbeans, green bulk	1 lb.	.21	Stringbeans, sliced	1 lb. can	.18	1.364	.18	.25	.04
Broccoli	1 lb. bunch	.24	Broccoli, spears, frozen	1 lb. pkg.	.40	.55	.40	.22	-.02
Peaches, freestone ^{5/}	---	---	Peaches, freestone, sliced	---	---	---	---	---	---
Peaches, freestone ^{5/}	---	---	Peaches, freestone halves	1 lb. pkg.	.31	.67	.31	.21	---
Peas, green, unshelled ^{5/}	---	---	Peas, shelled and frozen	1 lb. can	.24	.892	.24	.21	---
Peas, green, unshelled ^{5/}	---	---	Peas, green	1 lb. can	.17	.57	.17	.10	---
Corn, on cob with husks	1 lb.	.17	Corn, cut and frozen	1 lb. pkg.	.32	.24	.32	.08	-.09
Corn, on cob with husks	1 lb.	.17	Corn, whole kernels	1 lb. can	.16	.381	.16	.06	-.11
Apples, Eastern, bulk	1 lb.	.10	Applesauce	1 lb. can	.17	.585	.17	.10	None
Asparagus, bunch ^{5/}	---	---	Asparagus spears, frozen	1 lb. pkg.	.79	.50	.79	.40	---
Asparagus, bunch ^{5/}	---	---	Asparagus, spears	1 lb. can	.52	.755	.52	.39	---
Cucumbers	1 lb.	.25	Pickles, Kosher, whole	1 lb.	.25	---	.25	.25	None
Rhubarb, with tops	1 lb. bunch	.25	Rhubarb, cut and frozen	1 lb. pkg.	.29	.85	.29	.25	None
Plums, Prune type ^{5/}	---	---	Plums, purple	1 lb. can	.20	1.395	.20	.28	---
Pineapples, whole	1 lb.	.15	Pineapple, slices, frozen	1 lb. can	.34	.50	.34	.17	.02
Pineapples, whole	1 lb.	.15	Pineapple, chunks	1 lb. can	.24	.585	.24	.14	-.01
Oranges, Florida	1 doz.	.44	Orange juice, frozen conc.	1 qt.	.24	1.0	.24	.24	-.20
Oranges, Florida	1 doz.	.44	Orange juice, s.s.	1 qt.	.18	1.0	.18	.18	-.26
Oranges, Florida	1 doz.	.44	Orange juice, chilled	1 qt.	.29	1.0	.29	.29	-.15
Oranges, Florida	1 doz.	.44	Orange juice, fresh squeezed	1 qt.	.59	1.0	.59	.59	.15
Grapefruit, Florida	1 lb.	.08	Grapefruit sections	1 lb. can	.15	.525	.15	.08	None
Grapefruit, Florida	1 lb.	.08	Grapefruit sections, frozen	1 lb. can	.26	.50	.26	.13	.05
Lemons, bulk	1 doz.	.52	Lemon juice, plastic lemon	1 cont.	.19	1.5	.19	.22	-.23
Lemons, bulk	1 doz.	.52	Lemon juice, bottle	1/2 pt. bottle	.29	.75	.29	.22	-.30
Limes, bulk	1 doz.	.58	Lime juice, plastic lime	1 cont.	.19	3.0	.19	.57	-.01
Limes, bulk	1 doz.	.58	Lime juice, bottle	1/2 pt. bottle	.38	.50	.38	.19	-.39

Dairy products

Cheese, American block	1 lb.	.57	Cheese, American sliced	1 lb. pkg.	.59	---	.59	.02	
Cheese, Cheddar block	1 lb.	.69	Cheese, Cheddar sliced	1 lb. pkg.	.78	---	.78	.09	
Cream, whipping	1/2 pt.	.44	Cream, ready whipped	1/2 pt. can	.67	---	.67	.23	
Butter, wrapped bulk	1 lb.	.70	Butter, quartered	1 lb. pkg.	.72	---	.72	.02	

^{1/} It is recognized that probably all foods sold in the grocery store today have been changed in form to some extent by added marketing services, but as used here, unserviced foods are those that have been changed relatively little by processing or servicing.

^{2/} Conversion factors from "Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products," U. S. Dept. of Agr., May 1952, from U. S. Dept. Agr. Handbook 102, June 1956 and estimated from other data.

^{3/} Price of serviced product times conversion factor gives cost of quantity of serviced product equivalent to 1 unit of unserviced product.

^{4/} Prices from Journal of Home Economics, Vol. 49, No. 9, (Nov. 1957), pp. 717-19.

^{5/} Not available because product was out of season.

The frozen precooked dinner was omitted from the study because no accurate ingredient or yield data were available, at the time of the study. This information was necessary for price comparisons. However, the omission of the precooked dinner may be relatively unimportant, since sales of all frozen precooked foods amounted to less than 1 percent of all grocery store sales during 1956. 6/ A few of the frozen precooked foods such as frozen french fried potatoes, where yield data were available were included in the study. Table 14 provides a complete list of products and prices.

The prices given in this report are simple averages of prices for both groups of food in three different chain supermarkets. Prices were obtained for equivalent units of two or more brands of each food in each store whenever possible. 7/ From a total of 52 product price comparisons, 28 serviced food products were higher in price than the comparable unserviced products; 18 serviced products were lower in price than the comparable unserviced products; and 6 serviced products were equal in price to the unserviced products (table 15). The unserviced forms of 11 of the products selected for the study were not available in the stores because of seasonality. Seasonality is important not only in terms of availability, but as an influence on the price of food products. For example, angel food cake mix which contains a large quantity of egg whites may be cheaper than the separate ingredients during the fall when fresh egg prices are higher. Thus, some of the convenience foods may offer the consumer a cheaper alternative at certain times of the year but may be more expensive at other times.

Table 15.- Difference in total cost of 52 unserviced foods and equivalent quantity of serviced foods, averages for three supermarkets of three large chain store companies, Washington, D. C., December 9, 1957

Relation to cost of corresponding unserviced foods	Number of foods	Difference in total cost	Difference in average cost per unit
	<u>Number</u>	<u>Dollars</u>	<u>Dollars</u>
Serviced foods -- more expensive	28	3.32	0.12
Serviced foods -- less expensive	18	-2.94	-.16
Serviced foods -- same cost	6	0	0
All 52 serviced foods	52	.38	.007

6/ Olsen, Paul C., "What the Public Spends for Grocery Store Products," Food Field Reporter and Food Topics, Research, 1957.

7/ Conversion factors were used so as to make serviced and unserviced foods equivalent on the basis of number of servings in each unit of food; see table 14.

The 23 serviced foods which were more expensive than the corresponding unserviced foods cost a total of \$3.32 more than the unservice foods, or an average increase in cost of 12 cents per unit for each of the foods in this group (table 15). However, tea bags accounted for nearly one-half of the \$3.32 increase. The 18 serviced foods that were less expensive than the unserviced foods cost a total of \$2.94 less than the unserviced foods, or an average decrease in cost of 16 cents per unit for all foods in this group. Moreover, a homemaker who purchased all 52 of the convenience foods in the 3 stores in Washington, D. C., during December 1957, paid a total of only 38 cents more than a homemaker who bought all 52 of the comparable foods without the service. The average cost of the added service was less than 1 cent per item for all foods in the convenience food group.

The difference in the total cost of the 52 serviced foods and that of the corresponding unserviced foods does not, however, reflect accurately the impact of convenience foods on the food budget of the average shopper, since consumers do not buy the same number of units of each article. Expenditures also are distributed unevenly. For example, expenditures by the average consumer for one of the most expensive convenience foods included, tea bags, amount to only a very small part of her expenditures for all foods. Of the food groups included in the study, the average consumer spends the major share of her food budget money on meat, including poultry and fish; and on the fresh and processed fruits and vegetables. Prices of convenience foods in the meat and produce groups included in the study would, therefore, be a more important factor in determining whether convenience foods increased the cost of food to the consumer than would convenience foods in some of the minor or speciality foods groups.

To measure more accurately the impact of convenience foods on the food budget of an average consumer, the price of each convenience food or group of convenience foods included in the study was weighted by the percentage of her food budget that the average consumer normally spends for them. 8/

The results show the effect of the 52 convenience foods on the food expenditures of an average consumer, provided that (1) the expenditures are made within the convenience foods included in the study and (2) the consumer follows the purchase pattern of the average consumer in 1956. A consumer who bought \$100 worth of unserviced foods in three Washington, D. C., chain supermarkets during December 1957 would have had to pay only 61cents—less than 1 percent—more for the equivalent quantity of serviced foods.

Costs to the homemaker of preparing or servicing the unserviced foods in her own kitchen were not considered. Some of the processed foods included in the study such as prepared bread, frozen precooked sausage, canned-cooked ham, canned applesauce, and others actually are less costly than the price comparisons indicate, because, in order to prepare unserviced foods, the homemaker would have to bear the direct costs of home preparation such as gas or electricity for cooking and other direct and indirect costs of preparing the food in the kitchen, including the costs of detergents and scouring material for cleaning the utensils used. It should also be pointed out that most homemakers probably cannot approach the efficiency of food processors in preparing foods. For

8/ Percentages taken from article cited in footnote 6.

example, the commercial formula for bread, one of the serviced foods, contains a smaller quantity of ingredients per pound of bread than a home recipe calls for because in making small batches, there is more loss from dough sticking to pans and utensils. Any wasted food, of course, is an additional cost for the home prepared food not considered in the price comparison. Finally, no cost was added to the price of the unserved foods for the time it would take the homemaker to prepare them in her own kitchen. Time costs for the home preparation of foods are probably an important consideration to many homemakers. 9/

Convenience foods will require considerable research before a complete assessment of their effect on the individual consumer, the farmer, and the marketing system can be made. The pilot study reported on here represents the beginning of such an effort in the Department. An expanded version of the pilot study is in an advanced planning stage. Some of the more obvious shortcomings of the pilot study such as the need for price comparisons in different seasons and in different regions of the country and the need for yield data on items such as frozen precooked dinners for accurate price comparisons will be overcome by the methodology to be employed in the expanded study. In addition, other agencies in the Department have indicated an interest in researching related parts of the overall problem, particularly in the area of nutritional comparisons of the serviced versus nonserved foods, and in the area of costs and margins associated with serviced foods and their less serviced counterparts. It is hoped that such studies will provide the basic data needed to evaluate the impact of convenience foods from the points of view of the producer, processor, and the consumer.

9/ For further information on time required for home preparation of foods, see "Pilot Study of Money and Time Spent in Preparing Baked Products from Individual and Premixed Ingredients," by E. Asp, I. Noble, and F. Clark, Journal of Home Economics, Vol. 49, No. 9, (Nov. 1957), pp. 717-19, and "Time and Money Costs of Meals Using Home and Prekitchen-prepared Foods," Journal of Home Economics, by G. S. Weiss, Vol. 46, (1954), pp. 98-100.

